

In re: Application of Larry F. LEMANSKI et al.
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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended). A purified nucleic acid comprising a nucleotide sequence that is transcribed into a myofibrillogenesis-inducing RNA (MIR) molecule as identified by SEQ ID [[NO's]] NOS: 1[[,.]] or 5.

2. (Currently amended). The purified nucleic acid of claim 1, wherein said nucleotide sequence ~~encodes~~ is transcribed into an RNA molecule having a secondary structure that permits specific binding to at least one MIR-binding protein.

3. (Currently Amended). A purified nucleic acid comprising a nucleotide sequence that is transcribed into a myofibrillogenesis-inducing RNA (MIR) molecule as identified by SEQ ID [[NO's]] NOS: 1[[,.]] or 5 wherein said nucleic acid molecule further comprises a nucleotide sequence whose complement hybridizes under low, moderate or high stringent hybridization conditions to the nucleotide sequence of at least one of SEQ ID NO: 2 and SEQ ID NO: 3.

4. (Currently amended). ~~[[The]] A purified nucleic acid of claim 1, wherein the nucleotide sequence comprises~~ comprising a nucleotide sequence that is transcribed into a myofibrillogenesis-inducing RNA (MIR) molecule of SEQ ID NO: 1 and having a secondary structure that permits specific binding to at least one MIR-binding protein.

5. (Withdrawn). The purified nucleic acid of claim 1, wherein the nucleotide sequence shares at least 75% sequence identity with SEQ ID NO: 5.

6. (Currently amended). ~~[[The]] A purified nucleic acid of claim 1, wherein the nucleotide sequence comprises~~ comprising a nucleotide sequence that is transcribed into a

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myofibrillogenesis-inducing RNA (MIR) molecule of SEQ ID NO: 5 and having a secondary structure that permits specific binding to at least one MIR-binding protein.

7. (Currently amended). The purified nucleic acid of claim 1, wherein a ~~portion of~~ said nucleotide sequence that is transcribed into a MIR molecule comprises a first polynucleotide sequence of SEQ ID NO: 5.

8. (Cancelled).

9. (Cancelled).

10. (Currently amended). A purified myofibrillogenesis-inducing RNA (MIR) molecule comprising a ribonucleic acid sequence which is complementary to a deoxyribonucleic acid sequence, ~~wherein said ribonucleic acid sequence is transcribed into a myofibrillogenesis-inducing RNA (MIR) molecule and said deoxyribonucleic acid sequence transcribes a~~ polynucleotide of SEQ ID NO: 1 or SEQ ID NO: 5 and induces myofibrillogenesis in living cells.

11. (Original). The purified MIR molecule of claim 10, wherein said deoxyribonucleotide sequence comprises the sequence of SEQ ID NO: 1.

12. (Original). The purified MIR molecule of claim 10, wherein said deoxyribonucleotide sequence comprises the sequence of SEQ ID NO: 5.

13. (Currently amended). A vector comprising a purified nucleic acid cDNA of SEQ ID NO: 5 that is transcribed into a myofibrillogenesis-inducing RNA (MIR) molecule, ~~SEQ ID NO: 5.~~

14. (Original). The vector of claim 13, wherein the purified nucleic acid further encodes a MIR-binding protein.

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15. (Withdrawn). A method of inducing a cardiac muscle phenotype in a cell, said method comprising the steps of:

- a) providing a cell comprising at least one MIR-binding protein; and
- b) contacting said cell with at least one MIR molecule that specifically binds to said at least one MIR-binding protein, in an amount sufficient to induce a cardiac muscle phenotype in said cell.

16. (Withdrawn). The method of claim 15, wherein said cardiac muscle phenotype comprises formation of myofibrils or rhythmic contraction of the cell.

17. (Withdrawn). The method of claim 15, wherein said MIR-binding protein is selected from the group consisting of MIR-binding proteins having molecular weights of about 11-13 kDa and about 28-30 kDa.

18. (Withdrawn). The method of claim 15, wherein said at least one MIR molecule is encoded by a nucleic acid comprising a sequence that is less than 166 nucleotides in length and shares at least 75% sequence identity with SEQ ID NO: 1.

19. (Withdrawn). The method of claim 15, wherein said at least one MIR molecule is encoded by a nucleic acid comprising a sequence that is at least 167 nucleotides in length and shares at least 75% sequence identity with SEQ ID NO: 5.

20. (Withdrawn). The method of claim 15, wherein said at least one MIR-binding protein is exogenously added to said cell.

21. (Withdrawn). The method of claim 15, wherein said cell is a stem cell.

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22. (Withdrawn). The method of claim 15, wherein said step (b) comprises contacting said cell with a vector that comprises a nucleic acid that encodes said at least one MIR molecule.

23. (Withdrawn). The method of claim 21, wherein said nucleic acid further comprises a nucleotide sequence that encodes a MIR-binding protein.

24. (Withdrawn). The method of claim 21, wherein said cell is comprised within a heart.

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